

# Falls City Engineer

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U.S. ARMY CORPS OF ENGINEERS  
LOUISVILLE DISTRICT



***Environmental sampling  
goes one step further  
at Nike C-32 to ensure  
residents' safety  
see page 7***



## Falls City Engineer

Vol. 4, Issue 5

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**On the cover:** Contractor Steve Deeter, CH2MHill, analyzes soil borings taken near the Nike C-32 Missile Launch Area in Porter, Ind.

 **Please conserve:**  
**Think before you print.**

## Commander's Comments

Team,

This is the time of the year for all of us to reflect on the things we're thankful for, so I'd thought I'd share some of mine. Besides the obvious—family, good health, and the fortune to live in the best country on the planet—here are a few other things on my short list (I bet they are on yours too).

I'm thankful that I work in a place where a spirit of giving results in dozens of individuals giving up a day off to visit a rest home or to pick up trash in the rain; a place where compassionate people volunteer to sell brownies, donate books and encourage their co-workers to donate their hard earned money to give it to charity. I'm grateful for the low water, the great teamwork and the inspired effort that has turned around internal and public opinion on the Olmsted project. I'm thankful that the Sherman-Minton Bridge and Dixie Highway are both open. I'm thankful that I got to know and learn from Darrell Nation, Steve Rager and Susan Toutant. I'm thankful for the 22 in our ranks who are currently in Afghanistan and for the providence that keeps them safe. I'm grateful for the many employees who will enjoy their turkey without complaint while standing on a lock wall. I'm thankful that we were spared Sandy's wrath, and that many of us signed up to help in the



**Col. Luke T. Leonard**  
**Commander and District Engineer**  
**Louisville District**  
**U.S. Army Corps of Engineers**

recovery effort. Finally I'm grateful to be counted among you - the most competent, energetic and dedicated folks I've ever seen assembled. Enjoy your Thanksgiving!

Luke

## Contents

Cincinnati's Duck Creek automated gate closure passes test	3
Indy North project moves forward	3
Lean construction: Production management drives <i>Dam Excellence</i>	4
Service members get creative at new skills shop	5
Hazardous Energy Control: Lockout/Tagout	6
Environmental sampling goes one step further at Nike C-32	7
Jacobs receives Department of the Army Award	8
Reid receives Commander's Award for Public Service	8
Louisville engineers mentor Governor's Scholars	9

## Cincinnati's Duck Creek automated gate closure passes test

Carol Labashosky, public affairs

The Duck Creek, Cincinnati, automated gate closure structure across Madison Road—a busy thoroughfare—designed to protect residents from flooding has been successfully tested. The automatic flood gate is part of the Duck Creek Flood Damage Reduction Project. This was the final closeout activity for the project.

The test occurred in September with Corps staff and the city project team members present. To conduct the test, a flood scenario was simulated to see how the automated gate structure would operate in order to prevent flooding across the road.

A wet well contains instrumentation that would trigger an automatic closure of a flood gate across Madison Road, based on the elevation of Duck Creek. The photo illustrates the test. “The wet well is connected to the creek by a pipe, which ‘daylights’ at the concrete channel wall,” said Steve Thibaudau, Louisville District civil engineer.

“When the water in the creek rises, it would travel through the pipe and fill the wet well, and activate the green float switches,” he said.

Thibaudau explained that the lower green float switch sends a pre-warning when conditions exist which may trigger the gate closure. The upper green float switch sends the signal to the gate to start closing. The float switches were tempo-



The Duck Creek project uses a wet well to trigger the automatic closure of the flood gate at Madison Road.

rarily removed from the wet well during testing. Balloons had been placed in the pipe to the creek, in order to fill the wet well with water to test the instrumentation.

The gate closure was the final phase of the project which was turned over to the City of Cincinnati Sept. 24, 2012.

The flood gate is shown below in the open position. Based on input from instrumentation measuring the elevation of Duck Creek, the gate will close automatically to protect local businesses and residences from flash floods in Duck Creek.



The automatic flood gate which crosses Madison Road in Cincinnati as part of the Duck Creek Flood Damage Reduction Project passes its testing.

## Indy North project moves forward



Jack Sweeney

A public hearing was held in Indianapolis at the Meridian Street United Methodist Church Aug. 23.

Carol Labashosky, public affairs

The Indianapolis North Flood Risk Reduction project delivery team completed its Draft Supplemental Environmental Impact Statement (DSEIS) in summer 2012. In the statement, the U.S. Army Corps of Engineers recommended the Westfield Blvd. alternative levee and floodwall to complete the three-phase project. The Westfield Blvd. alternative is a cost-efficient solution that would provide flood risk reduction benefits to approximately 1,700 homes and businesses in the project footprint.

Additionally, the Corps recommended tree removal at previously constructed sections of the project and changes to mitigation of the project's environmental impacts.

A Corps public hearing and open house were held Aug. 23. The team members described the implications of the three alternatives that were proposed in the DSEIS to the public. Although two segments of the levee system are complete, flood damage reduction benefits cannot be realized until the entire three-part levee and floodwall are complete. More than 100 citizens gave formal statements for the record during the hearing which followed the open house.

The Louisville District will now prepare a Final SEIS which will provide detailed responses to the public and agency comments and include changes and clarifications resulting from those comments.

Louisville District Commander Col. Luke Leonard said, “The hearing went well. I can appreciate how the community feels, and I was able to listen to information I hadn’t heard before.”

For information on the project and DSEIS go to <http://bit.ly/indynorth>.

Steve Thibaudau

Steve Thibaudau

# Lean construction

## Innovative production management drives Olmsted *Dam Excellence*



Superintendents, field office engineers, quality control inspectors and members of the Operation Dam Excellence support team plan work at the daily morning meeting in the Olmsted production control center.

Jon Fleshman, public affairs

The results of Olmsted's new production management system are positive.

"Last year they built SBS-3 (third stilling basin shell) in two shifts of 60 hours per week; this year they are building SBS-5, which is about the same size, on one shift of 40 hours per week in the same duration," explains Capt. Dave Burrier, a project manager who monitors schedule execution variances for the cost reimbursement section at the Corps of Engineers' Olmsted field office.

Operation Dam Excellence (ODE) is the name, coined by the deputy resident engineer Brad Bradley, for performance improvement during the current construction phase of the Olmsted Locks and Dam. And a big part of the improvement is credited to the Construction Project Production Management System (CP2Ms®) deployed at Olmsted in 2011. According to Bob Wheeler, the dam precast operations manager with the joint venture WGA-Alberici, CP2Ms includes production planning and control concepts found in Lean Construction, the Toyota Production System and ideas developed by Construction Concepts, a Greensboro, N.C. consulting firm responsible for CP2Ms.

"I was looking for a process to help us reduce our dam construction costs," says David Dale, Corps of Engineers' deputy district engineer for Olmsted. During a senior partnering meeting in 2010, Dale

directed the joint venture to get a consultant to apply lean construction and "get more efficient."

First came a site visit, then a productivity audit. After briefing management on its findings, Construction Concepts recommended a roadmap to pursue the operational goals of productivity, safety and quality. Once management was on board, the trades were brought in with town hall meetings, brochures, fliers and fact sheets in their pay envelopes that described the new production management system.

One of the five components of CP2Ms is Assured Production Planning and Control, explains Michael Casten, Construction Concepts. A feature of that component is the boards in the production control trailers that get populated with color-coded sticky notes representing current and future work. Casten emphasizes that there is a significant planning effort prior to the boards being covered with Post-It Notes and work assignments issued to the trades. He also notes his construction management system is about accountability or "production control."

For Rich Hamilton, the concrete batch plant superintendent, the daily detailed planning meetings with all the trades allows him "to see ahead of time potential conflicts or particular needs. ... The concrete we make can contain up to six ingredients and logistics could be a nightmare. Our largest pours of 6,000 cubic yards equates to 400 truckloads."

To Todd Miller, a journeyman carpenter with 18 years of construction experience and with the last three and a half at Olmsted, the value the planning adds to the project is clearly of a practical nature.

"Our organization is a lot better. We're able to get crews combined to do things better," Miller explains. "We're not just standing there waiting for another craft working in our area to get something done because we didn't plan. Everyone knows what everyone else is going to do that day, from an apprentice to the superintendent." For him the best thing about the system is that every craft has a display board and every craft can look at what the other craft is doing, coordinate the work flow and "not bump into each other."

Ironworker veteran Glen Bragg echoes Miller's assessment. "When you're working with multiple crafts it helps to coordinate your efforts and eliminate waste," says the casting yard's superintendent for rebar and structural steel who's been an ironworker since 1978. "Our daily huddle to update the boards helps everybody see what's happening and what's going on. The waste goes away. I couldn't imagine not using this system."

A critical feature of the process has been encouraging suggestions for improvement from the trades at the work face.

"Action Learning Teams played a major role early on and are a tool we use a lot to solve strategic or project-wide problems or constraints," Casten says. "They led to the emergence of many new leaders like Glenn Bragg."

In addition to the daily meetings of section managers and superintendents, there's a weekly meeting of a group of key contractors and Corps of Engineers representatives known as the "guiding coalition."

"The coalition is select project leaders providing vision and leadership to incorporate developed production strategy and its implementation plan," explains Mick Awbrey, coalition member and Corps of Engineers construction management specialist. "Its goal is incrementally raising performance expectations and perfecting production processes through continuous learning."

## Service members get creative at new skills shop

Katie Newton, public affairs

A ribbon-cutting ceremony was held Oct. 17, 2012, to celebrate the new Consolidated Arts and Crafts/Auto Hobby Complex in the Kitty Hawk area of Wright-Patterson Air Force Base, Ohio.

The \$8.9 million project was designed and constructed by the Air Force Services Agency and the Louisville District Corps of Engineers that combined two older facilities into one consolidated modern facility. This unique facility houses the arts and crafts center, which includes silk screening and wood working, auto shop, and a touch-free car wash. Non-appropriated fund revenues, rather than taxpayer dollars, paid for the project.

"This facility offers the Wright-Patterson community a one-stop shop," said Clayton Hayes, Louisville District project manager. "The arts and crafts center is a great place to participate in an ongoing hobby, or learn a new craft or skill. Each shop offers custom work as well as do-it-yourself capability—both basic and advanced skills are taught in all classes."

The facility offers services and classes in woodworking, framing and matting, stained glass, painting, basket weaving, porcelain doll making and rubber stamping. The building also has a frame shop, multi-craft classrooms, graphics shop, silk screening setup, and a retail area.

"The silkscreen machine has already been very beneficial as it was put to the



Bob Bayham

*The new Consolidated Arts and Crafts/Auto Hobby Complex opened its doors in August to the 88th Force Support Squadron at Wright-Patterson Air Force Base.*

test for the production of t-shirts for the Air Force marathon this summer," said Hayes. "In the past, large orders such as this would have been contracted out."

The auto shop is equipped for tune-ups, wheel balancing and alignment, engine analysis, brake repair and painting with staff on site to offer technical assistance if needed.

The car wash facility sits adjacent to the main building, with two hand-wash bays and an automatic touch-free car wash.

The contractor, Monarch Construction

Company, Cincinnati, Ohio, constructed the 38,000 square-foot facility in a little more than a year so the 88th Force Support Squadron could occupy the facility August 21, 2012.

"The facility was a long time in the making with several years of design behind it, but it was ultimately completed early and under budget," said Hayes. "Upon meeting and talking with the employees of the facility during the ribbon cutting ceremony, they were all very enthusiastic and impressed with the way the building turned out."



Clayton Hayes

*The auto shop is equipped for tune-ups, wheel balancing and alignment, engine analysis, brake repair and painting with staff on site to offer technical assistance.*



Clayton Hayes

*The new skill shop offers different spaces for a variety of crafts and hobbies ranging from woodworking to basket weaving.*

# Hazardous Energy Control: Lockout/Tagout



*The Louisville District recently experienced a rise in electrical incidents resulting in personal injury and property damage. Following established procedures in your workplace keeps everyone safe. Review, update, train and practice your local Hazardous Energy Control (HEC) Procedures.*

## *What is Lockout/Tagout (LOTO)?*

The practices and procedures necessary to disable machinery or equipment, thereby preventing the release of hazardous energy while employees perform servicing and maintenance activities. Lockout devices hold energy-isolation devices in a safe or “off” position.

## *Is controlling hazardous energy sources important?*

Federal OSHA estimates that compliance with its lockout/tagout standard prevents 120 fatalities and 50,000 injuries each year. Workers injured on the job from exposure to hazardous energy lose an average of 24 workdays for recuperation.

## *What regulations govern the HEC Program?*

USACE owned/operated facilities shall comply with **ER 385-1-31(2009)** and **CELRL 385-1-43**.

All others should know and follow **Section 12** of **EM 385-1-1** and federal OSHA’s lockout/tagout standard—**1910.147**, **ANSI Z244.1** and **ANSI A10.44**. They establish your responsibility to protect employees from hazardous energy sources on machines and equipment during service and maintenance, and address the practices and procedures necessary to disable such equipment.



## *What are the training requirements for employees involved with Hazardous Energy Control Procedures?*

USACE employee training specifics are outlined in **Chapter 5** of **ER 385-1-31 (2009)**. At a minimum, initial and annual training followed with a written assessment. Training must be documented. Contractor’s specifics are outlined in **Section 12.B** of **EM385-1-1**.

## *What are the responsibilities of each USACE facility?*

Each facility involved in servicing and maintenance of machines and equipment must establish a comprehensive Hazardous Energy Control Program.

## *Is there a video I can watch that helps explain HEC/LOTO to me?*

Yes, watch the video at: <http://vimeo.com/16498994>

## *Who can I contact to find out more information about the HEC Program?*

The District Safety Office can be reached at (502) 315-7061.



# Environmental sampling goes one step further at Nike C-32 to ensure residents' safety



Contractors Justin Beasley and Steve Deeter, CH2MHill, analyze soil borings taken near the Nike C-32 Missile Launch Area Sept. 10 as part of the ongoing environmental investigation at the site.

Katie Newton, public affairs

Residents in the Dune Meadows Subdivision near the former Nike C-32 missile launch area in Porter, Ind., have been watching crews take soil samples from their backyards and water samples from their faucets to find out if any contaminants have infiltrated their property from the neighboring defense site. Three different homeowners near the formerly used defense site (FUDS) have graciously allowed the Corps of Engineers access during their remedial investigation.

"We just want to make sure that there isn't anything additional outside the property boundary or anything else that needs to be addressed," said Brooks Evens, Geologist, Louisville District Army Corps of Engineers. "The safety of the surrounding community is our number one concern."

The Nike C-32 site operated from 1957-1974, along with numerous other Nike sites throughout the country, to protect major cities from invading attacks. Although the Nike C-32 site never launched a missile, it employed nearly 30 personnel who worked on-site cleaning and preparing parts in case of an attack. Ultimately, the types of degreasers that were used for cleaning the parts for the missile silos filtered into the ground on-site and have been identified by the Corps' investigation. Their additional findings will result in a Proposed Plan to address the future remedial action. As part of the ongoing environmental investigation, the Corps

wanted to expand their sampling perimeter and make sure that no contamination had moved off-site.

To get started the Corps installed 12 Membrane Interface Probe (MIP) locations as a screening tool. "That allowed us to place the monitoring wells and soil gas borings in the proper location to give us the information needed for risk assessment and to define the boundary of the contamination," said Evens.

In this phase of the investigation, crews spent nearly three weeks both on-site and off-site taking soil samples, installing groundwater monitoring wells and soil vapor monitors to test the air and water.

"Everything looks really good and clean so far," said Justin Beasley, CH2MHILL, the contractor for the environmental project. Twenty soil samples were taken and sent off for additional analysis.

The process of soil sampling starts with a sonic drill rig, powered by Major Drilling, subcontractor, Huntsville, Ala., which uses the machine to dig down 30 feet. In each location the drill rig provides six different soil borings—in five-foot increments—that can be analyzed immediately by geologists in the field. Using a trowel to separate sediment pieces for submittal to the lab, geologists can gauge soil properties by color, texture and smell. Additionally, a handheld photo ionization detector was used on-site to detect any trichloroethylene (TCE) vapors. "That would signal right away if it peaked in an

area then we would know that the particular sample needed to be analyzed further," said Evens.

Three 25-foot shallow groundwater monitoring wells were placed off-site in the backyards of private residences, which will be left in place for one year and sampled quarterly. Twenty groundwater monitoring wells exist on site and will be monitored for another year. Shallow wells are 20-25 feet, while the deeper groundwater wells are 45-55 feet deep. The deeper wells are used to determine if the shallow groundwater contamination is migrating deeper.

"These results will be instrumental in letting us know whether or not any contaminants have spread, and if so, how deep they have gone," said Evens.

The final part of the site work involves the installation of five soil vapor tests, which look like small, stainless steel gas grills. "The air tank releases the vacuum so all the air goes into the bowling ball shaped container at the top," said Evens. "That will give us an idea whether TCE is percolating up." With no margin for error, the capsules have to be monitored overnight for a full 24-hour period. "We'll have to babysit the air vessels to keep the chain of custody intact," said Evens. "We can't move them because we might get a leak—they have to be stationary for 24 hours."

Brittney Hyde, Louisville District Environmental Engineer, pulled an all-nighter in late September to make sure the canisters were not disturbed. "It is extremely important that the integrity of the canisters remain intact for chain of custody purposes, this ensures the data is defensible and defensible," said Hyde.

Additionally, the Corps and CH2MHILL took this investigation one step further and tested the tap water in the homes of the three closest residents. Test results showed no contaminants were present in their drinking water. "This is great news," said Evens. Residents were notified of the results in October.

The remedial investigation is ongoing and a proposed plan is expected in 2014.

## Jacobs receives Department of the Army Award

Carol Labashosky, public affairs

The U.S. Army Corps of Engineers Louisville District Reserve Support branch has a success story to report. Sylvia Jacobs, District Reserve Support Team (RST), who worked out of Texarkana on the furniture team, was presented a Department of the Army Commander's Award for Civilian Service. The U.S. Army Reserve (USAR) Support furniture team coordinates the procurement of furniture for USAR projects and ensures timely delivery and installation of the furniture for Reserve construction projects.

Jacobs was cited for performance of her duties in support of the Louisville District furniture team in an outstanding manner, demonstrating initiative, skill and leadership. Joe Gates, Army Reserve, special programs, presented the award in August.

"Sylvia was dedicated above and beyond any support we could ever have expected," said Bob Harris, the team's project engineer.

Jacobs worked with the RST furniture team for 14 years as a civil servant. She worked for UNICOR Furniture Division, the Office Furniture Group, and was a government employee for the Federal Bureau of Prisons. UNICOR is the industry section of the Federal Bureau of Prisons,

and its mission is to employ and provide job skills training to inmates.

"I was responsible for managing furniture projects from pre-award to the payment stage.

"This pertained to helping the RST team with product, fabric and laminate selection, receiving the MIPR (Military Interdepartmental Purchase Request), purchase order, and placing the bill of materials into production. Once the order was placed with the delivery date, I monitored the project for possible changes to the order such as product or delivery dates," she said.

"I attended the furniture inspection to address any remaining issues to be resolved. To accomplish this task, I directed my sales representative, factories and installation team with direction," said Jacobs.

On a daily basis Jacobs was not only the liaison between the Louisville District RST Furniture Team and UNICOR, but she worked a large territory of six states where she also managed furniture orders.

"Of all the acknowledgements and awards I received during my tenure with the Bureau of Prisons and specifically for my retirement, this award means the most to me as it acknowledges customer satisfaction," Jacobs said.



Candace Cornette Milligan

Sylvia Jacobs, fifth from left, with the RST furniture team.

The RST furniture team and Jacobs shared the mission of providing products and services to a very important customer. "This customer is part of a group of men and women dedicated to protecting our freedom. With soldiers coming back from overseas as reservists or reserve recruits, providing them with a comfortable and workable office helped me to feel a part of their mission," she said.

An in-depth feature story in the October 2011 Falls City Engineer edition, explains the story of the Louisville District's "Championship Furniture Team" of which Jacobs was a part. For this story see page 3 at this link <http://www.lrl.usace.army.mil/internet/article.asp?id=558&MyCategory=134>.

## Spotlight

## Reid receives Commander's Award for Public Service

Joseph S. Reid, Assistant U.S. Attorney, U.S. Attorney's Office, Northern District of Indiana, received the Commander's Award for Public Service for his significant contributions to accomplishment of the Flood Risk Management and Environmental Stewardship missions at Mississinewa Lake, Upper Wabash Project Office, Louisville District, U.S. Army Corps of Engineers (USACE).

In 2009, approximately 5,600 cubic yards of soil were left on USACE property at Mississinewa Lake which destroyed natural resources—a direct impact on the Corps' Environmental Stewardship mission—and reduced the amount of water storage area impacting the Flood Risk

Management mission. Over the next two and a half years, different enforcement entities both federal and state were approached and requested to prosecute the encroachment and to get the soil removed. Due to various limitations those entities did not convey a real interest in prosecuting to have the soil removed.

When Reid was assigned the case, he showed initiative and understanding of the ramifications of inaction. He worked with the adjacent landowner's attorney to achieve resolution. The soil was removed as of July 2012.

The soil removal would have cost USACE an estimated \$85,000. In a time of budget cuts, Reid's efforts allowed



Rebecca Wormley

Janice Lengel, chief, Louisville District Office of Counsel, presents the Commander's Award for Public Service to Joseph Reid, Assistant U.S. Attorney

USACE to avoid what would have been an unanticipated financial hardship and ensured compliance with two of the Corps' main missions.

# Louisville engineers mentor Governor's Scholars

Rosemary Gilbertson and Anne Mulhall,  
engineering division

The U.S. Army Corps of Engineers, Louisville District, has been a major supporter of the Kentucky Governor's Scholar Engineering Program since its inception in 1998. The Kentucky Governor's Scholar Program strives to enhance Kentucky's next generation of civic and economic leaders and create models of educational excellence for teachers and students.

The Kentucky Governor's Scholar Program was established in 1983 to provide academic and personal growth to Kentucky high school students through the balance of a strong academic program with a full co-curricular and residential life experience. The students selected to participate in the program are the highest academic achievers in the state of Kentucky. Each applicant must complete an application and compete with others from across the state, making those selected the most academically elite high school students in the state of Kentucky. The program is a five-week residential program consisting of classroom-based instruction, creative and challenging technical projects, and day-long experiences with four engineering industries.

The Louisville District once again teamed with the Kentuckiana Post of the Society of American Military Engi-



The 2012 class of the Kentucky Governor's Scholars Engineering Program at the historic log school house, Taylorsville Lake in Taylorsville, Ky.

Stephanie Harmon, GSP Engineering Program

neers (SAME) to enhance the experience of the scholars participating in the engineering program. The district provided all personnel resources and transportation for the event, while the Kentuckiana Post of SAME provided a grant to cover additional expenses including professional portfolios for each scholar, lunch and pontoon boat rental fees for the construction site tour.

This year's event was a great success.

Thirty-eight Governor's Scholars and three faculty members, traveled from their program base at Bellarmine University, Louisville, Ky., for a day of learning on Taylorsville Lake with a variety of district personnel. On June 20, 2012, the scholars, faculty and district personnel boarded pontoon boats to view a construction site and the dam at Taylorsville Lake. The group also went to Taylorsville Middle School to put their learned knowledge about civil engineering to practical use.

Each group designed an access road and parking for a boat ramp adjacent to the lake. They concluded their practical design experience by presenting their design solutions to their fellow scholars and the Corps of Engineers personnel that were present. In addition, the group toured McAlpine Locks and Dam, Louisville, Ky., in July to reinforce the engineering principles they had learned.

It took many people to make this year's event a huge success for all involved. Special thanks to the Louisville District team who devoted their time to educating the scholars: Shannon George, Sheryl Sison, Kate Brandner, Jessica Fox, Casey Cummins, Jason Cain, Martha Shultz, Kurt Schaefer, John Allison and Rosemary Gilbertson.



One team of Governors Scholars presents their design of an access road and parking lot to their classmates, faculty, and Corps of Engineers staff.

Stephanie Harmon, GSP Engineering Program